research areas, and individuals, groups or institutions and funding them for undertaking research; evolve nationally coordinated programmes in various identified areas; assist in setting up infrastructure and environment for scientific pursuit; achieving synergy between academic institutions, research and development laboratories and industry for promoting basic research in science and engineering and engage a management system to speedily provide for funding research, including monitoring and evaluation, by adopting modern management practices.

India's position in field of scientific R&D

†383. SHRI JAI PARKASH AGGARWAL: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) the position of India in the field of scientific research and development in global context;

(b) the number of applications submitted for patent of new inventions by Indian scientists and those by other developed and developing countries during last five years; and

(c) the steps taken to arrest the present slow pace of progress in the field of scientific research and development in India?

THE MINISTER OF SCIENCE AND TECHNOLOGY (SHRI KAPIL SIBAL): (a) The R&D expenditure as a percentage of Gross Domestic Product (GDP) and R&D manpower per million population of select developed and developing countries is given in the Statement (*See* below).

(b) The total number of applications filed by Indians and foreigners during the last five years is as under:

Year	Patent applications filed		
	Domestic	Foreign	Total
2003-04	3218	9395	12613
2004-05	3630	13836	17466
2005-06	4521	19984	24505
2006-07	5314	23626	28940
2007-08	6040	29178	35218

(c) The Government has taken various measures from time to time to enhance scientific research and development activities in the country. These measures include higher allocation for scientific research from Plan to Plan, setting up of new institutions for science education and research, creation of centres of excellence and facilities in emerging and frontline areas in academic and national institutes, induction of new and attractive fellowships such as INSPIRE, BOYSCAST, strengthening infrastructure for R&D in universities, offering attractive salary packages along with incentives, national awards for outstanding R and D etc. Accordingly, the Government have enhanced Eleventh Plan allocation for scientific departments to Rs. 75,304.00 crores from Rs. 24,301.35 crores during the Tenth Plan.

†Original notice of the question was received in Hindi.

Statement

R&D Expenditure as percentage of GDP and Researchers per Million People for Selected Countries, 2004-06

Sl. No.	Country	R and D Exp. as % GDP	No. of researchers per million people
1	2	3	4
1.	Argentina	0.49	895
2.	Australia	1.78	4053
3.	Austria	2.46	3657
4.	Brazil	0.82	461
5.	Canada	1.97	3922
6.	China	1.42	926
7.	Czech Rep.	1.54	2578
8.	Denmark	2.44	5277
9.	Finland	3.43	7681
10.	France	2.12	3353
11.	Germany	2.52	3386
12.	Hungry	1.00	1745
13.	India	0.88	140
14.	Italy	1.10	1407
15.	Japan	3.40	5546
16.	Korea Rep.	3.23	4162
17.	Mexico	0.50	464
18.	Netherlands	1.69	2524
19.	Norway	1.49	4668
20.	Pakistan	0.44	80
21.	Russian Fed.	1.08	3255
22.	Singapore	2.39	5713
23.	Spain	1.21	2639
24.	Sri Lanka	0.19	141

1	2	3	4
25.	Sweden	3.82	6139
26.	United Kingdom	1.80	3033
27.	United States	2.61	4651
28.	Venezuela	0.23	86

Source: UIS, UNESCO

World Development Indicators

The World Bank Research and Development Statistics at a Glance, DST.

Low investment in Science and Technology R&D

384. SHRI N.R. GOVINDARAJAR: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether the investment in our country for Science and Technology Research and Development is very low as compared to other developing countries;

(b) if so, the details thereof;

(c) whether the number of Scientific Research papers in India in the past ten years has increased from 11,000 to 19,000 whereas the number in China during the same period has jumped from 10,000 to 55,000;

(d) if so, the details thereof;

(e) whether the CSIR, largest Research organization is considering to allow its scientists who own patents to float private companies; and

(f) if so, the details thereof?

THE MINISTER OF SCIENCE AND TECHNOLOGY (SHRI KAPIL SIBAL): (a) and (b) According to the available official statistics, the expenditure on Research and Development (R&D) as percentage of Gross Domestic Product (GDP) in India is 0.88%, which is higher as compared to most of the developing countries excepting China where it is 1.42%.

(c) and (d) As per the Science Citation Index (SCI) database, the number of Scientific Research papers in India increased from 11067 (in 1997) to 22215 (in 2007). Where as in China, the research papers during the same period increased from 12632 (in 1997) to 67433 (in 2007).

(e) and (f) Yes Sir, the CSIR proposal envisages equity participation of inventors in private companies.

Steps to enhance the strength of scientists

385. SHRI MOINUL HASSAN: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state: